

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-6-56
Relating to Certification of New Off-Road Compression-Ignition Engines

ISUZU MOTORS LIMITED

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Crane, Loader, Generator and Other Industrial Equipment

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Emission Control Systems and Special Features</u>
1SZXL09.8EXA	9.8	8000	Direct Diesel Injection Turbocharger Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), oxides of nitrogen (NO_x), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NO_x), carbon monoxide (CO), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>		
			<u>HC</u>	<u>NO_x</u>	<u>NMHC+NO_x</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
225≤KW<450	Tier 2	Standard	N/A	N/A	6.4	3.5	0.20	20	15	50
		Certification	--	--	6.3	1.4	0.19	19	6	44

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 7th day of March 2001.

A handwritten signature in black ink, appearing to read "R. B. Summerfield", is written over the printed name and title.

R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **Isuzu Motors Limited**

Engine category: **Nonroad CI**

EPA Engine Family: **1SZXL09.8EXA**

Mfr Family Name:

Process Code: **Running Change**

U-R-6-56

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
6SD1XABEA-01	AA-6SD1X	333.1@2200	176.0@2200	129.2@2200	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEA-02	AA-6SD1X	317.0@1750	191.0@1750	111.5@1750	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEA-03	AA-6SD1X	237.9@2200	126.0@2200	92.5@2200	738.0@1600	135.0@1600	72.1@1600	EM,TC,CAC,DFI
6SD1XABEA-04	AA-6SD1X	227.3@1750	138.0@1750	80.6@1750	738.0@1600	135.0@1600	72.1@1600	EM,TC,CAC,DFI
6SD1XABEA-05	AA-6SD1X	335.4@1950	187.0@1950	121.6@1950	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEB-01	AA-6SD1X	333.1@2200	176.0@2200	129.2@2200	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI
6SD1XABEB-02	AA-6SD1X	317.0@1750	191.0@1750	111.5@1750	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI
6SD1XABEB-03	AA-6SD1X	237.9@2200	126.0@2200	92.5@2200	738.0@1700	135.0@1700	76.6@1700	EM,TC,CAC,DFI
6SD1XABEB-04	AA-6SD1X	227.3@1750	138.0@1750	80.6@1750	738.0@1700	135.0@1700	76.6@1700	EM,TC,CAC,DFI
6SD1XABEB-05	AA-6SD1X	335.4@2000	186.0@2000	124.1@2000	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI
6SD1XABEC-01	AA-6SD1X	333.1@2200	176.0@2200	129.2@2200	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEC-02	AA-6SD1X	335.4@2000	186.1@2000	124.1@2000	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEC-03	AA-6SD1X	335.4@1950	187.0@1950	121.6@1950	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABEC-04	AA-6SD1X	322.5@1800	190.0@1800	114.1@1800	991.0@1600	195.0@1600	104.1@1600	EM,TC,CAC,DFI
6SD1XABED-01	AA-6SD1X	333.1@2200	176.0@2200	129.2@2200	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI
6SD1XABED-02	AA-6SD1X	335.4@2000	186.0@2000	124.1@2000	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI
6SD1XABED-03	AA-6SD1X	322.5@1800	190.0@1800	114.1@1800	977.0@1700	193.0@1700	109.4@1700	EM,TC,CAC,DFI